1: Med Hypotheses. 2005;64(3):458-63.

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Add Alzheimer's disease to the list of autoimmune diseases.

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A sole pathological event leading to Alzheimer's disease (AD) remains undiscovered in spite of decades of costly research. In fact, it is more probable that the causes of AD are the result of a myriad of intertwining pathologies. However, hope remains that a single awry event could lead to the many pathological events observed in AD brain tissues thereby creating the presentation of simultaneous pathologies. Age-related vascular diseases, which include an impaired blood-brain barrier (BBB), are a common denominator associated with various degrees of dementia, including AD. Recently, a key finding not only demonstrated the anomalous presence of immunoglobulin (Ig) detection in the brain parenchyma of AD tissues but, most importantly, specific neurons that showed degenerative, apoptotic features contained these vascular-derived antibodies. In addition, subsequent studies detected classical complement components, C1q and C5b-9, in these Ig-positive neurons, which also were spatially more associated with reactive microglia over the Ig-negative neurons. Thus, it is possible that the mere presence of anti-neuronal autoantibodies in the serum, whose importance had been previously dismissed, may be without pathological consequence until there is a BBB dysfunction to allow the deleterious effects of these autoantibodies access on their targets. Hence, these observations suggest autoimmunity-induced cell death in AD.

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